REMARKS

Claim 1 has been amended to further define the claimed invention. Claim 1 now recites a further element (c), i.e., inorganic oxide matrix, which is recited in original Claim 30.

Claim 30 has been cancelled.

Claim 31 has been amended to change its dependency from Claim 30 to Claim 1.

Election/Restriction

Applicants confirm the election of claims 1-44 of this application, and withdraw their election with traverse. Applicants therefore request withdrawal of non-elected claims 45-71 with reservation of the right to continue their prosecution in one or more separately filed divisional applications.

§112, Second Paragraph Rejection

Claims 1-44 have been rejected under 35 USC §112, second paragraph. It is stated in the June 28 Office Action that reciting "0.2% by weight or less Na_2O" in conjunction with "further comprises" leads to indefiniteness on whether the presence of Na_2O is optional. Applicants request reconsideration of this rejection.

Claims are sufficient under §112, second paragraph, as long as one of ordinary skill in the art would understand what is and what is not covered by the claims. One can make this determination with reference to the specification.

The Examiner has already noted that the range of "0.2% or less" includes zero. It is further clear from the specification that reducing the Na_2O content as much as possible enhances the performance of the claimed catalyst's sulfur reduction performance. It inevitably follows that one would prefer no detectable amount of Na_2O, if possible. It is therefore submitted that the skilled artisan would construe the range as referring to Na_2O as an unwanted contaminant, not a desirable option, and that if Na_2O is not eliminated completely, the claimed composition will contain 0.2% by weight Na_2O or less. It is submitted the claims and specification therefore clearly establish this understanding and withdrawal of the §112, second paragraph, rejection is therefore requested.

§102 Rejection Based on Madon et al.

It is stated in the June 28 Office Action that claims 1-7, 13, 15, 24-31 and 38 are rejected under 35 USC §102 as being anticipated by Madon et al. (WO 93/19138). It is stated that the abstract of Madon discloses a fluid cracking catalyst comprising a zeolite and Lewis acid sites. It is further stated that page 3, lines 15-17, and page 5, lines 15-19, of Madon discloses a catalyst containing less than 0.1% by weight Na_2O. Applicants, however, respectfully request reconsideration of this rejection in light of the amendment to Claim 1.

Madon discloses a fluid catalytic cracking catalyst designed to increase isobutylene and isoamylene. It is apparent that Madon's catalyst is prepared from zeolite and a matrix of alumino silicate. While Madon discloses the presence of Lewis acid sites vis a vis Bronsted acid sites, it is submitted that Madon is silent with respect to the source of the Lewis Acid sites within the composition. It is submitted that the abstract and page 6 at best suggests that the Lewis acidity is of zeolite-containing catalyst composition as a whole. That said, it is submitted that the Lewis acidity described by Madon reflects the acid sites on the zeolite and matrix disclosed by Madon.

The Lewis acid in Applicants' invention, however, is in a component possessing Lewis acidity that is separate from the zeolite and matrix. Amended Claim 1 now reflects that the Lewis Acid component is another material in addition to the zeolite and any matrix present. There is no disclosure by Madon to suggest that his catalyst contains such a component. The Lewis acid component of Applicant's invention provides a significant contribution to the overall catalyst composition's ability to reduce gasoline sulfur and has been disclosed as a separate component to be added to zeolite and matrix-containing fluid catalytic cracking catalysts. Applicants have found that lowering the sodium content below a certain level in the overall catalyst composition (that includes the zeolite and matrix) improves the gasoline sulfur reduction performance resulting from this component. Madon simply does not disclose such a component, nor suggests minimizing the content of Na_2O to improve gasoline sulfur reduction.

It is also respectfully submitted that Madon does not disclose sodium content of the zeolite itself, nor does Madon report sodium levels of a Lewis acid

component. Madon is only reporting the sodium content of the overall catalyst composition. See Page 5, lines 18, which reports sodium levels for catalyst material that also contains alumino silicates. It is therefore not seen how such a disclosure anticipates the subject matter of claims 6, 7, and 29, which recite certain sodium levels in the zeolite itself and/or the Lewis acid component itself. Madon also does not disclose or suggest a Lewis acid component that is in a particle separate from the zeolite and matrix as recited in Claim 31. Applicants therefore respectfully request that the §102 rejection of the above claims be withdrawn.

§103 Rejection Based on Nakaoka

It is stated in the June 28 Office Action that claims 1-44 are rejected under 35 USC §103 as being unpatentable over Nakaoka (US 5686374). Applicant respectively traverses.

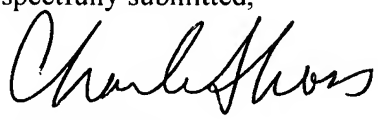
Nakaoka discloses a hydroprocessing catalyst. Such catalysts are quite large in particle size relative to the particle size of fluid catalytic cracking catalysts. Indeed, Nakaoka discloses in Example 1 a catalyst extrudate having a diameter of 1.6mm, which is 1600 microns. See Column 5, line 63. It is submitted that such catalysts are designed to be incorporated into slurry based reactors. Applicants' invention on the other hand relates to cracking catalysts capable of being maintained within a fluidized cracking unit. Paragraph 21 of Applicants' specification states that Applicants' invention relate to catalysts having a fine powdery size such that it can achieve a fluidized state when aerated with gas. Such catalysts are disclosed by Applicant to be in the size range of 20 to 150 microns. It is therefore not seen how claims directed to fluid catalytic cracking catalysts can be rejected as *prima facie* obvious over Nakaoka.

Nakaoka also does not disclose minimizing the content of Na_2O to improve the performance of a Lewis Acid components in enhancing gasoline sulfur reduction. Indeed, Nakaoka is silent as to the presence of Lewis Acid in its catalyst. Since Nakaoka is directed to hydroprocessing catalysts and since Nakaoka is completely silent as to the Lewis acidity of the components used to make such catalyst, it is not seen how Nakaoka provides any motivation to add a Lewis acid component to a fluidized cracking catalyst, much less suggesting to

minimize Na_2O to improve the component's performance. Withdrawal of this rejection is requested.

It is respectfully submitted that the claims are patentable over the references cited in the Office Action and Applicants request notification to that effect in the form of a Notice of Allowability.

Respectfully submitted,



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